

Application for an exempted fishing permit (EFP) to continue research on ways to reduce halibut bycatch mortality rates on Amendment 80 vessels through modifications to fishing practices and catch handling procedures

Date of Application: January 8, 2015

Requested permit dates:

First possible date for implementation in 2015 to December 31, 2015

Applicant Information:

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Signature of Applicant:



EFP vessel information:

The EFP could include any vessel under the authority of an Amendment 80 permit owned by a member company of the AKSC. A final list of participants will be provided to NMFS prior to final issuance of this EFP.

Overview:

The purpose of this EFP is to collect additional data about the frequency that halibut deck sorting is used by Amendment 80 vessels when it is available as an option; this application requests greater flexibility for EFP participants about when to use deck sorting relative to prior deck sorting EFPs. The goal of this EFP is to reduce mortality of halibut bycatch in the Amendment 80 sector in 2015.

The Alaska Seafood Cooperative (AKSC) successfully conducted a second deck sorting EFP from April through October in 2012 (EFP 12-01). The deck sorting methods employed resulted in meaningful reductions in halibut mortality rates on participating vessels relative to non-participating vessels and a good accounting of halibut catches and viability rates for halibut sorted on deck. One specific objective of the 2012 EFP was to assess the feasibility of deck sorting on different Amendment 80 vessels in different target fisheries. The findings for that objective were that deck sorting under the procedures of EFP 12-01 was workable in many but not all Amendment 80 target fisheries. Further, the testing did extend to a wider range of Amendment 80 fisheries but only those in spring and early fall for reasons detailed below. The final report for EFP 12-01 identified several ways catch handling procedures for deck sorting

could be modified to make it more feasible. The final report for EFP 12-01 is available at: <http://www.alaskafisheries.noaa.gov/ram/efp.htm>.

The AKSC is in the process of developing an application for an EFP that would utilize new technology on deck and also fully incorporate all the recommendations from the 2012 EFP. This includes the use of motion-compensated flow scales on deck to weigh halibut, an Electronic Monitoring (EM) system to monitor catch handling activities of crew members while sorting and weighing halibut on deck, and other adjustments to the catch handling and viability sampling procedures designed to speed up the return of the halibut to the sea with minimal mortality without compromising the information necessary to management. Due to the timeline for the availability of the scales for use on deck and time/resources needed to fully develop and approve the larger scale EFP, that EFP will not be possible until 2016.

This is an application for an interim EFP covering 2015 to allow deck sorting as an option for handling halibut taken as bycatch for participating vessels. Under this EFP, participants could use deck sorting on tows when they have the necessary sea sampler coverage and they provide proper notice to the sea sampler as well as other requirements outlined below. The existing catch handling procedures would be in place on tows when the deck sorting option is not being used. Under this arrangement, deck sorting is available when participants feel it will be effective for reducing halibut mortality. It therefore could be used on all tows on a fishing trip, a subset of tows, or none. Whenever deck sorting is not used, the existing catch handling procedures will be in place to estimate halibut catch and mortality rates would be assigned according to the existing Amendment 80 practices.

With deck sorting as an option, we believe that the 2015 EFP will actually result in a more realistic assessment of deck sorting benefits in terms of the degree to which it is used across the different fisheries and as a fraction of the overall halibut catch by participating vessels. We also think that the 2015 project will provide a more realistic assessment of viability of deck sorted halibut because deck sorting will be done when it makes sense in terms of the prospect of creating reductions in halibut mortality. In addition, the EFP will also assist the efforts of the Amendment 80 sector in 2015 to address a very high priority of the NPFMC and IPHC to reduce halibut bycatch mortality usage in 2015.

The construct of allowing deck sorting as an optional catch handling procedure is a very important feature of this EFP. As such, it addresses one of the inherent limitations to the 2012 EFP where the rules were that once a vessel started EFP operations it was expected to continue in that mode for all trips until ended its EFP participation. Likewise deck sorting had to be done for all tows while a vessel was participating in the EFP in 2012. These two components were needed at that time because we were focused on the question of whether deck sorting could replace the current the Amendment 80 catch handling procedures in all of the sector's target fisheries.

One of the outcomes of the "all or nothing" rules of the 2012 EFP was that participants only engaged in the EFP when they felt they could conform to the rules for all tows. Participants therefore checked into the EFP when they felt they could make a suite of trips where deck

sorting would be feasible on every tow. The months that the EFP was active in 2012 were April and May and then September through mid-October. These are essentially good weather months and times when target fisheries tend to lend themselves to deck sorting on every tow during a trip.

The downside of the design of the 2012 EFP became evident when participants noted in informal exit interviews that if deck sorting were available as an optional way of handling halibut on tows where it made sense to use it, better use of deck sorting in terms of reductions in halibut mortality rates could be made. If deck sorting were available on a more flexible basis, participants thought they could use it over a wider set of target fisheries, conditions, and a wider part of the fishing year. For example, some winter days during rock sole and flathead sole fishing have reasonable weather for deck sorting and productive reductions in halibut mortality could be made under those conditions. They thought that the same would be true of the fall and winter. But a requirement for deck sorting on all tows and trips would force the boat to curtail fishing in weather that is safe for fishing under the current catch handling rules but not necessarily safe for sorting through the net for 10-20 minutes to remove halibut and account for them and their viability.

One of the objectives of this 2015 EFP is to learn about how often deck sorting will be used throughout the year and in what fisheries and how much of participants' total halibut catch is sorted on deck when deck sorting is available as an option. For this 2015 work, we will use essentially the same data collection methods as the ones used in 2012 with one exception, the inclusion of an option for participants to use one sea sampler instead of the two that were required in 2012. The option for a single sea sampler is needed because we will have a greater number of vessels participating simultaneously in the EFP this time. In looking at the expected number of AKSC boats working in the EFP simultaneously in 2015, observer provider companies do not think they can provide two qualified sea samplers for each participating vessels during all of months when EFP operations would occur.

Recognizing this difference from the 2012 model, we have incorporated limitations on working hours when a single sea sampler is on board for this EFP. To ensure that data can be collected from all tows where deck sorting occurs, deck sorting will only be allowed when a sea sampler is available. For tows where deck sorting occurs, essentially the same data collection methods as the ones used in 2012 will occur.

With this option for one sea sampler, we expect that a greater number of participating vessels will be able to make use of the EFP and therefore the research will effectively extend to a larger set of vessels and wider window of time than would be possible given the limitations on sea sampler availability.

If a vessel is able to arrange for two sea samplers, then the vessel will be able to do deck sorting around the clock. In that case, the sea samplers will work on opposing 12 hour shifts like they did in 2012 so that they can collect data from all deck sorted tows. When the vessel only has one sea sampler, participants will have to restrict deck sorting operations to a daily schedule that meets the time window for the sea sampler to be on duty. This will be based on a reasonable work schedule, effectively the work schedule outlined in the North Pacific Observer Program for

a single observer deployed on a vessel. We expect that there may be greater availability of sea samplers at times when pollock and other fisheries are not in operation so it is more likely that participating vessels will take two sea samplers at those times.

Regardless of the number of sea samplers on board, with the availability of deck sorting as an option, the EFP will also need to include some procedures for giving notification to sea samplers that deck sorting will occur on an upcoming tow. This is essential to ensure that those data collection mechanisms are in place and working whenever deck sorting occurs. To make this work, the EFP will include a system to provide timely notice to sea sampler(s) for tows with deck sorting,

Sea samplers will sample all tows where deck sorting is done using the same stratified random sampling design from 2012 to collect length and viability information for approximately 20% of the halibut sorted on deck. The 2012 EFP showed that these methods were adequate for reliably estimating halibut catches and accounting for viability. The sampling fraction of 20% of the halibut in a tow from 2012 EFP was also successful in collecting length and viability information without appreciably slowing down the return of the halibut to the water. This is important for minimizing mortality, the most important objective of this EFP and potentially most important tool for the Amendment 80 sector to address the halibut bycatch issue.

For tows where deck sorting occurs, any halibut missed during deck sorting operations will be collected in the factory by the crew under the supervision of the sea sampler. Once they are collected, the sea sampler will measure the halibut collected in the factory. This follows what was done in 2012. To ensure good accounting of the halibut that were not removed during deck sorting, the contents of the net must remain in the tank and cannot be run over the vessel's flow scale until deck sorting is completed and the all the catch from the tow is dumped into the tank. Just like in 2012, the crew cannot start to run the fish out of the tank until the sea sampler is stationed in the factory to oversee the crew's collection of halibut missed during deck sorting.

In considering how to assign mortality rates to the halibut collected in the factory on tows with deck sorting, it is important to consider that the mortality rate of halibut collected in the factory in the 2012 EFP was (89%) across the different target fisheries in the EFP. This is higher than the "official rate" used for the different A. 80 target fisheries. This result was consistent between EFP vessels and fishery targets. The EFP final report noted in its findings that this likely resulted from the EFP procedures which included a prohibition on running the fish out of the vessel's stern tank until all deck sorting was completed and the sea sampler was in the factory to oversee the collection of halibut missed during deck sorting. Additionally, the crew members in the factory were directed to place the halibut collected in the factory into a tote. Once all of the fish in the tank were run over the vessel's flow scale, the sea sampler measured the collected halibut and did viabilities on them. With these procedures, the probable explanation for the higher mortality rates in the EFP for factory halibut was the additional time out of water with the EFP procedures.

Based on what was learned in 2012 and considering the goal of keeping the methods for this EFP as close as possible to 2012, there is little point to doing viability assessments in the factory in

this EFP. We therefore propose to use the 89% mortality rate for halibut collected in the factory as the mortality rate assigned to in the factory on tows where deck sorting occurs. This will simplify accounting and focus the sea sampler's work on doing viabilities where they are meaningful.

The sampling methods and procedures used to estimate the amount of sorted on deck and the resulting amount of mortality are explained in detail below. These methods follow exactly what was done in 2012. They involve converting the length data from the randomly sampled halibut sorted on deck to weights and then extrapolating the average weight to the number of halibut sorted on deck. The amount of halibut mortality is then determined by the average viability of halibut sampled on deck for that tow. A spreadsheet will be used by the sea sampler to enter the data and the amount and resulting mortality will be generated by the spreadsheet.

Following deck sorting and under the supervision of the sea sampler, the crew in the factory will collect any halibut missed during sorting operations. The sea sampler will then measure the halibut collected in the factory and a mortality rate for factory halibut will be applied to these fish. This information will be entered into the portion of the spreadsheet for factory halibut (as occurred in 2012). In addition to the reason offered above for skipping the viability sampling in the factory, use of the default mortality rate avoids the problem of needing to wait until the vessel's observers complete their sampling to assign a target fishery to the tow. Additionally, the 89% mortality rate is very close to the dead category (a mortality rate of 90% is applied to halibut in the dead category).

Under the constructs described above, the participating vessels will be able to use deck sorting as a means for which their halibut catch and its mortality is accounted in 2015 to the extent that weather allows and it makes sense in terms of expected reductions in halibut mortality rates. Of interest here is what the maximum usage of deck sorting in 2015 could be. In exploring the question, at least theoretically, participants could make expansive use of deck sorting under the flexible structure of the EFP. This assumes, however, that they are able to arrange for two sea samplers on board throughout the year so that all their tows could be handled with deck sorting. As has been explained above, the degree of use of deck sorting is expected to be lower for many reasons including the probable outcome of the EFP will not be in place on January 20th, the expected shortfall of sea samplers relative the level of participation in the EFP over the course of the year, and the weather and other factors.

The design of the EFP is to allow participants to deck sort as much as they can and therefore remove as much halibut on deck as they can. Significantly lower mortality rates are expected to be achieved, and participants are unlikely to be constrained by their allocation of 2015 AKSC halibut mortality. But the concept of the EFP is to make deck sorting available as flexibly as possible to encourage participants to use it whenever they feel it will be worthwhile in terms of reductions in halibut mortality. So this EFP does not place a limit on the amount of the AKSC's halibut allocation that could be sorted on deck even if there are practical limits on it in reality.

The savings in halibut mortality from this EFP are the expected lower mortality rates for deck sorted halibut compared to the rates that those fish would have received if they had not been

sorted on deck where mortality rates range from 76%-82% in the major flatfish target fisheries. While conceptually all of those savings are therefore available to participants because the lower mortality rates would allow them to theoretically catch more target fish, in reality AKSC member vessels have not been using all of their Amendment 80 halibut mortality allowances since 2008 when Amendment 80 started. Hence under the most likely scenario, the lower mortality rates for deck sorted halibut will create even greater savings in halibut mortality usage than has occurred under A. 80 thus far. Additionally, as part of the trawl sector's efforts to lower mortality usage in 2015, AKSC and other fleets are planning to reduce mortality usage relative to what occurred in 2014. This is being done via an arrangement that is being developed between different sectors of the fishery and IPHC. Its goal is to enable the IPHC's 4CDE directed halibut fishery to take place at a meaningful level in 2015. Deck sorting is likely to be a major tool AKSC uses in its overall efforts to meet that objective.

EFP Objectives

- 1. Conduct an assessment of the benefits of deck sorting in terms of savings of halibut mortality under an arrangement that deck sorting is available as an optional catch handling procedure provided EFP participants meet all the requirements to use deck sorting.**
- 2. Evaluate the usage of deck sorting in terms of frequency of tows where deck sorting is used relative to the existing catch handling procedures and the percentage of participants' total halibut catch that is sorted on deck.**
- 3. Evaluate the utility of deck sorting as an option in the context of the rules and constraints of the EFP.**
- 4. Provide a final report from the EFP that succinctly evaluates the outcomes in terms of performance indices for how often participants sorted halibut on deck, what portion of the overall halibut catch was sorted on deck, average mortality rates of halibut sorted on deck, and other indicators of performance of interest to NMFS, NPFMC, and the IPHC.**

How the EFP objectives will be accomplished and project management responsibilities under the EFP

Using the construct that participants can decide to use deck sorting on trips and on tows during those trips where the potential for reducing halibut mortality exists, the EFP should be an effective assessment of the benefits of deck sorting as an optional fish handling method. To ensure the EFP attains its objectives, the AKSC will actively track the data on halibut catch and halibut mortality usage by participating vessels on tows where deck sorting is used. This includes the mortality associated with halibut sorted on deck and in the factory. AKSC will work with EFP participants to confirm that they are fully apprised of the mortality rates and total (deck plus factory) halibut mortality generated from tows where deck sorting is used. At the same time participants will need to keep track of the halibut usage on tows where deck sorting is not used via the normal catch accounting mechanisms already in place. Careful monitoring of halibut mortality usage is needed to ensure the goal for reduction in halibut mortality agreed to with the IPHC is attained. The accounting methods used to keep EFP participants informed of

performance and attainment of the objectives over the course of the EFP are effectively the same ones used in 2012. Doing this for a greater number of vessels operating in the EFP simultaneously is a new challenge but AKSC has the internal expertise to do this successfully.

In addition to effective tracking of performance with participants, AKSC will also work with the sea samplers to verify that they are collecting data using the required procedures of the EFP. To help sea samplers understand the duties, AKSC will work in collaboration with the observer provider companies to provide briefing materials for sea samplers who will work on the EFP. This will include clear descriptions of sampling methods and instructions for using the Excel spreadsheets that will track the halibut catch and resulting mortality from tows where halibut are sorted on deck. AKSC will provide the observer providers with other training materials relevant to understanding the duties for sea samplers such as a short video describing the project, halibut sampling procedures, and entering data into the spreadsheet.

As data from the project are received electronically from the different vessels, AKSC will spot check it to verify that sea samplers are collecting and recording data correctly. Screening the data for outliers that may reflect data entry errors and other problems will also be done. Communications with sea samplers will also allow them to flag any concerns they may have with the participants' deck sorting procedures. If issues that are flagged in this process will need to be remedied and failure to do so will mean that the vessel will not be able to continue its participation in the EFP.

Halibut handling and sampling methodology for tows with deck sorting

Vessel crew will be responsible for sorting halibut from the catch as it is spilled out of the codend in the trawl alley. The sea sampler on duty will actively monitor deck sorting activities whenever deck sorting is occurring. The EFP will employ the rigorous catch handling procedures detailed below to rapidly sort halibut, sample them for viability and length, and return them to the water. The EFP catch handling protocol will only allow for halibut to be sorted on deck. All other catch must be handled and accounted for according to the current Amendment 80 catch handling regulations.

The crew will move the halibut from the trawl alley to the sea sampler's work station on deck via a chute attached to the deck. Sea samplers will conduct sampling on or directly adjacent to the halibut chute, depending on which location is best.

The sea sampler will randomly select halibut for length and viability sampling using the deck sheets that randomize the stratified samples over the halibut sorted on deck. Halibut counts will be used for estimating total weight of deck-sorted halibut. The counts will be made by checking the boxes on the sampling sheet. Halibut lengths will be determined by sliding the fish onto an anchored length strip, and recording the fish's length on the deck sheets. Standard IPHC viability assessment methods for trawl vessels will be used to assess halibut viability. Sampled halibut will be returned to the halibut chute and moved overboard in the same manner as un-sampled halibut.

Sample size will be approximately one-fifth of the halibut sorted on deck. Halibut will be randomly selected such that approximately one out of every five will be sampled as they pass

across the halibut chute. To prevent bias, the sea sampler's samples will be randomized through the use of different versions of deck sheets following the same procedures used in 2012. To make this work, only the sea sampler will have access to this sampling schedule. In this manner, the crew should have no way of knowing which halibut will be sampled. The sea samplers will record on the deck sheets the time every time they select a halibut for data collections.

The estimated weight of halibut sorted on deck will be calculated by multiplying the number of halibut sorted on deck (the count) by the average weight of sampled halibut (using the length to weight conversion provided to the EFP applicant by the IPHC).

The sampling plan and size were developed through a statistical analysis for the 2012 EFP which was designed to ensure reasonable accuracy for estimating catch and viability. The statistical methods behind and the performance of the sampling design from 2012 are reported in the final report from the 2012 EFP (see: <http://www.alaskafisheries.noaa.gov/ram/efp.htm>).

The use of the 2012 sampling design for this EFP should once again allow for the collection of sufficient information about the halibut sorted on deck without significantly slowing the return of the fish to the water. This is critical so that the viability of halibut is not negatively affected by the data collection process itself. In 2012, the sampling methods were successfully carried out in this regard and on most tows the sea samplers duties were actually able to keep up with the crew's sorting of halibut.

Draft and final reports will be made for this EFP as was done in 2012. The focus here will be on the percentage of the time deck sorting was used by each participant over the course of the year and the fraction of each participants overall halibut catch that was sorted on deck and the resulting mortality for halibut sorted on deck compared to halibut mortality for halibut collected in the factory.

EFP vessel selection, target fisheries, timing, and project area:

The EFP holder will inform NMFS of the list of AKSC vessels that will participate in the EFP. At this point, AKSC would like to be as inclusive as possible because that will result in the best assessment of the potential benefits of deck sorting across the different fisheries and vessel sizes in Amendment 80. Additionally, our goals for halibut mortality reduction in 2015 require a large scale effort to use tools that will be effective towards that goal and deck sorting is clearly one of the best tools for meeting that objective without large scale reductions in groundfish catches. We anticipate being able to provide a more definitive list of participants over the next few weeks.

AKSC will provide briefings to all sea samplers who will work on this EFP. This will be coordinated through the observer provider companies who will engage sea samplers for this EFP. Prior to deployment in the EFP, the sea samplers will be briefed by AKSC on the purpose of the EFP and their specific duties including how to use the deck sheets for sampling and the Excel spreadsheet for recording data on halibut sorted on deck. Use of the spreadsheet involves entering data on total number of halibut sorted on deck from the deck sheets, the lengths of halibut for sampled halibut, and the viability assessments. The spreadsheets will then generate the estimates of total weight of halibut sorted on deck and amount of estimated halibut mortality for the halibut sorted on deck for each tow. Sea samplers will also be provided instructions on

how to electronically send the spreadsheet data to AKSC at regular intervals so that it can be initially checked for data entry errors and outliers and discrepancies so that they can be resolved in a timely manner.

All EFP fishing will occur in areas open to non-pelagic trawling in the Bering Sea as well as sub-area 541 of the Aleutian Islands where arrowtooth/Kamchatka flounder would be the likely target. Flatfish fisheries will be the EFP focus, although some target fishing for Pacific cod will likely occur during the EFP. Catch compositions and amounts are expected to be similar to non-EFP fisheries conducted during these times and in these areas. EFP fishing is expected to be concentrated mostly east and northeast of the Pribilof Islands, and in the “Horseshoe” (northeast of Dutch Harbor), although locations within the Bering Sea must be left flexible so that vessels are able to operate where fishing conditions dictate within areas open to Amendment 80 fishing activities. No access is sought to areas closed to non-pelagic trawl fishing. Non-pelagic trawls with required modified sweeps will be used to conduct EFP fishing. Depending on halibut bycatch rates, EFP vessels may use halibut excluders to help control halibut bycatch rates. Use of halibut excluders is typical of Amendment 80 catcher processors in these fisheries, and consistent with the objectives of the EFP in terms of evaluating deck sorting under representative conditions. EFP fishing may occur at any time in 2015 following the date of EFP issuance.

Non-halibut species use and catch accounting:

AKSC receives annual target species allocations, including yellowfin sole, rock sole, and flathead sole. Additionally, AKSC vessels regularly engage in other non-allocated BSAI flatfish fisheries, such as arrowtooth and Kamchatka flounders. Within AKSC, allocated quotas are distributed to vessels or companies. Individual captains and company representatives use a combination of data sources to ensure fishing amounts do not exceed quotas. Additionally, AKSC managers monitor catch amounts for all cooperative vessels, and NMFS monitors aggregate cooperative quota catch to ensure quotas are not exceeded. Non-allocated target species are managed by NMFS. In-season managers determine when non-allocated total allowable catch (TAC) amounts are reached and close fisheries accordingly.

Observer data collected on Amendment 80 vessels are electronically transmitted to FMA, and then transmitted to NMFS’ Alaska Region in Juneau, AK. The catch accounting system (CAS) expands observer data, stores these data, assigns fishery targets, and performs other critical in-season management tasks. These data are used by NMFS and AKSC to manage both allocated and non-allocated target fisheries.

For this EFP, both allocated and non-allocated target and prohibited species catch data (all catch except halibut) will be managed, tracked, and stored in the CAS according to non-EFP fishing protocols. NMFS will debit allocated aggregate non-halibut catch from AKSC allocations. ***No additional halibut quota is requested as part of this EFP application, and all groundfish catch will accrue against Amendment 80 target species and non-allocated catch allowances.***

As noted elsewhere in this application, target fisheries selected for this project are prosecuted as part of normal Amendment 80 operations. Because catch amounts will accrue against Amendment 80 allocations, catch composition of fishing is not expected to change under the EFP. Therefore, the overall amount and composition of groundfish taken during the course of

this EFP is expected to be commensurate with normal fishing operations in the target fisheries and time frame selected for the EFP.

For 2015, the AKSC halibut PSC allocation is 1,693 mt. The purpose of this EFP is to make halibut deck sorting available as an option to as many Amendment 80 vessels and tows as feasible. Thus, the AKSC anticipates using a maximum of 1,693 mt of halibut PSC for this EFP; however the amount of the AKSC's halibut PSC allocation that will be used under the EFP is likely to be substantially less than the full allocation.

Halibut quota, use, and catch accounting:

For tows with deck sorting, the AKSC will track the amount of halibut mortality for fish sorted on deck and the ones collected in the factory as estimated through the procedures of the EFP. This will be tracked by vessel over the course of the EFP and cumulatively for all vessels that participate in the EFP. AKSC will, in conjunction with the EFP participants, track the amount of halibut mortality accounted for in the EFP. This is needed so that EFP participants stay under the halibut mortality limits from their Amendment 80 including the mortality from tows where deck sorting occurs and tows where it does not. The attainment of objectives for reduction in halibut mortality in 2015 also depend on accurate and timely accounting and AKSC has in the past demonstrated its ability to work with its member vessels to ensure this occurs.

AKSC will, through its data management efforts coordinated with member vessels participating in the EFP, track overall halibut usage during the season. The overall objective of this coordinated data management effort is to ensure that the participating vessels accurately account for and monitor halibut mortality usage from deck sorting and halibut mortality from halibut collected in the factory.

Because halibut mortality and viabilities will be sampled according to the methods described below, halibut catch estimates and viabilities from tows with deck sorting will not be entered into the CAS. This is because the CAS is programmed to accept data according to current observer sampling protocols.

Halibut catch estimations and mortality rate calculations for the EFP

For the data management purposes of the EFP, halibut catch data and mortality for tows where deck sorting occurs will be collected and recorded on a tow-by-tow basis. This is necessary to meet the EFP's catch accounting objectives and allow information to be aggregated to more generalized levels, such as halibut catch per trip for each EFP vessel, and overall halibut catch and mortality usage. The methods of accounting for halibut catch and mortality are as follows:

- 1) Estimated weight of halibut sorted on deck. This will be calculated by converting the length of each sampled halibut to a weight using the standard conversion and then dividing the sum of the weights by the number of halibut sampled. This average weight of halibut in a tow will then be multiplied by the number of halibut in the tow, which is determined by the sea sampler's tally.

- 2) Estimated mortality of halibut sorted on deck. The estimated weight of halibut sorted on deck (1 above) will be multiplied by the average mortality rate for sampled halibut. For example, if there are five sampled halibut in a tow and three are assigned a rating of excellent, one is assigned a rating of “poor”, and one is assigned a rating of “dead”, then the average mortality rate will be: $(0.2 + 0.2 + 0.2 + 0.55 + 0.9) / 5 = 0.41$. The estimated weight of deck-sorted halibut within the tow (#1 above) would then be multiplied by 0.41, resulting in the estimated mortality of deck-sorted halibut for that tow.
- 3) Total mortality of halibut in a tow with deck sorting: This is the sum of #2 plus the mortality for halibut collected in the factory by sea samplers. The amount of halibut mortality for halibut collected in the factory on tows with deck sorting is as follows. Each fish will be measured and the lengths will be converted to weights using the standard length to weight conversion. The mortality rate of 0.89 will be applied to that weight of halibut.

EFP monitoring and project management: For deck sorting to occur on an EFP vessel any time during 2015, at least one sea sampler is required to be on board and in place to collect the necessary catch and viability data on deck and in the factory. Sea samplers will only work on the EFP halibut sampling/accounting duties, and the vessel’s regular observers will complete their normal duties. Sea samplers will be required to meet all NMFS North Pacific Groundfish Observer Program requirements, but will not be under contract as current observers.

Vessels wishing to have the option to do deck sorting at any time must have two (2) sea samplers whenever deck sorting occurs. Sea samplers will work opposing 12-hour shifts so that halibut data are collected on all hauls. Vessels with one sea sampler on board can only do deck sorting when the sea sampler is on duty based on the work schedule described above. In either case, EFP vessels will also continue to be required to have their normal observer coverage requirements (2 observers) at all time while fishing in the Bering Sea. Because sea samplers will work independently, AKSC will consult with FMA and the observer provider companies to ensure high quality sea samplers are deployed.

By July 15, 2015 all vessels authorized to participate in this EFP must have a camera system in operation to monitor and record deck sorting activities. The performance requirements for recording and archiving the video for these deck monitoring systems will be based on the existing requirements for bin monitoring systems required on Amendment 80 vessels where crew members work in the vessel's stern tanks. The delayed start if this requirement is needed to provide sufficient time for EFP participants to coordinate the purchase and installation of these systems with vendors. Prior to July 15, 2015 and once systems are installed on vessels, all EFP participants will arrange to have an authorized representative of NMFS approve the deck monitoring system to ensure it meets the requirements. Participants that fail to meet this requirement by the above date will no longer be able to participate in the EFP.

Exemptions to the Amendment 80 and other regulations needed for this EFP:

To accomplish the study objectives, specific regulatory exemptions from current Amendment 80 catch handling procedures will be needed:

1. Catch handling regulations currently prohibit catch sorting or removal on deck, prior to observer sampling (50 CFR 679.93(c)(1)). Additionally, these regulations require all catch to be weighed on a NMFS-approved scale. During the EFP, catch estimates and viability assessments of halibut will occur principally on deck (and in the processing area for any halibut missed on deck) according to the methodology described below. These activities would normally occur at the observer work station below deck.
2. Second, regulations at 50 CFR 679.93(c)(5) prohibit catch from remaining on deck without an observer present. Because halibut will be handled on deck, exemption from this regulation is necessary.
3. Regulations at 50 CFR 679.7(g)(2) prohibit sorting catch prior to observer sampling. Because sampling will occur on deck, a regulatory exemption will be needed.

Provisions for public release of data and information from EFP and provisions for interim and final reports from EFP:

Upon completion of the fieldwork described above, the EFP applicant (principal investigator) will analyze the EFP data and draft a report summarizing findings. The draft report will be a concise description of EFP objectives and methods, and the qualitative and quantitative findings. This draft report and the raw data used in the analysis will be made available for review by FMA, NMFS, Alaska Region, and IPHC.

Once the principal investigator receives and incorporates draft report comments, a second draft will be compiled and shared with the above agencies. After comments on the second draft are incorporated into the report, the principal investigator will notify the North Pacific Fishery Management Council that the report is ready for presentation, and make it available to Council staff. Finally, the principal investigator will present findings to the Council and its advisory bodies at their convenience.

Catch handling and catch accounting/halibut viability assessment procedures

1. The EFP holder is responsible for notifying NMFS prior to the start of any EFP fishing by the vessels listed above. Notice must be made at least 7 days before the start of any EFP fishing activities. The EFP holder will notify NMFS at the conclusion of EFP activities of all vessels that participated in the EFP.
2. Pre-cruise briefing: Before EFP fishing starts, each observer that has not previously participated in a cruise under this EFP must be briefed by NPGOP staff. The briefing must describe the specific elements of EFP fishing under this EFP, including the role of and responsibilities of sea samplers, observers, and the crew. The briefing must be held at and scheduled at least 7 days in advance through the NMFS Dutch Harbor office (at 907-581-2060). If NMFS staff are not available to schedule and conduct the briefing in Dutch Harbor, contact Chris Rilling (206-586-4195) of the NPGOP office in Seattle. The permit holders must provide each observer with a copy of the signed EFP permit prior to the briefing.
3. One hour prior to haulback the vessel captain or mate is responsible for notifying the sea sampler and the observer on duty that the vessel will sort halibut on deck in the upcoming

tow/tows. This will be done by “EFP check-in” briefing between the vessel captain, sea samplers, and on duty observers. When EFP fishing stops, the vessel captain or mate is responsible for notifying the sea sampler and the observer on duty that the vessel is “checking-out” of EFP fishing. For each tow where deck sorting occurs, vessel personnel are required to mark “EXP” as the management program code in the CP elogbook and are required to record a catch entry in the elogbook with the total amount weight of halibut mortality (deck-sorted halibut plus halibut in the factory).

4. The codend will be brought on deck and pulled forward of the live tank hatch to create adequate room for sorting halibut as the codend is being dumped into the tank.
5. The codend zipper will be removed in a manner that achieves a reasonable rate of flow of catch out of the codend to allow halibut to be sorted out of the catch by the deck crew and slid from the trawl alley to the specialized halibut chute on each EFP vessel.
6. Only halibut can be removed from catch on deck. The one exception to the “only halibut can be sorted on deck” rule is for marine mammals, large sharks, or debris etc. as per standard procedures for regular Amendment 80 fishing.
7. Halibut will be handled in a manner so as to minimize injury/mortality and should not be lifted by the tail or gills. Crew members will slide halibut sorted from the catch on deck onto the chute or conveyor belt leading to where the sea sampler on duty is working. Crew members will work with the sea sampler to adjust the pace at which halibut are moved, to provide the sea sampler with adequate time to collect and record length and viability data on halibut selected for sampling.
8. Sea samplers will be provided workspace adjacent to the conveyor belt or chute that allows them adequate space to do length and viability data collections on halibut selected for sampling. The space provided will need to allow for halibut data collections without having to lift the halibut.
9. Sea samplers will check off each halibut sorted on deck on the randomized sampling schedule sheet provided to them for the EFP. Sea samplers will collect length and viability data for the halibut indicated on the sheets for sampling. The deck sheets will have ten different randomized sampling schedules and the sheets shall be shuffled prior to their use
10. Sea samplers will record the start time (time that codend is brought on deck), end time (when last halibut from a tow is returned back to the water), and time when data are collected from each halibut selected in the sampling. Time when sorting activities are concluded will also be recorded. Every halibut selected for sampling will have a data record with the EFP haul number. This will be used following the EFP to evaluate the relationship between elapsed time and viability.
11. A sea sampler must be present on deck for deck sorting to occur. The sea sampler must be on deck for the entire time whenever halibut are being handled on deck for each tow during the EFP. Fish from the tow being sorted on deck must remain in the tank during deck sorting operations on deck and the hatch from the tank to the processing area must remain closed.
12. Following the completion of deck sorting and the sea sampler’s data collection work on deck, the sea sampler will move to the processing area and the crew can then begin to run the fish from that tow collected in the vessel’s stern tank(s) across the flow scale. At that time, the sea sampler will oversee the collection of any and all halibut from the tow that

were not removed during sorting operations on deck. Halibut collected in the factory will be placed in a tote under the supervision of the sea sampler.

13. When all the fish in the tank have been run over the flow scale and all halibut missed during deck sorting operations are collected in the tote, the sea sampler will measure each halibut and record its length on the portion of the deck sheet provided for that purpose.
14. Sea samplers will be provided adequate time each day to enter the data from their deck sheets into the Excel spreadsheet on a computer provided to them for this purpose.
15. Sea samplers will communicate with the vessel's regular observers to minimize disruptions to the catch sampling duties of the regular observers.
16. Sea samplers will provide total halibut catch weight and total halibut mortality amount per tow (calculated in the manner described above) to the vessel personnel and regular observers for all tows where deck sorting is done. Sea samplers will also send the data to the AKSC by email once daily.
17. Sea samplers will immediately report any problems and departures to the above EFP procedures to the EFP field project manager. The AKSC as permit holder and project manager will assess the nature of the problem and work with the participating vessel and sea sampler to address the problem. In the event that problems are not resolved, the AKSC will, in consultation with NMFS personnel, consider suspending or terminating the vessel's participation if problems cannot be successfully remedied.